REMARKS

The new claims 45-48 are supported in the passage, quoted below, at pages 104/105 in the specification. Claim 49 is supported by the oil reservoir described at page 63, line 11, in the specification, in the drawing, and in the text quoted at page 14 below. Claim 29 is amended for clarity.

The new claims are patentable for the reasons below.

Claim 9 is objected to for "≥2 mm to ≤10 mm." Claim 9 is amended in view of the Examiner's remarks.

Claims 8-13 are rejected under 35 U.S.C. §103(a) as being obvious over WO 01/73293 in view of Kim et al., US 6,533,064 and Singletary, US 5,642,991. This rejection is respectfully traversed.

Claims 8 and 11, as exemplified in instant Fig. 12, recite

a gasket [124] held between the cover [e.g., 66] *and the support member* [54]*; and*

an O ring [e.g., 126] *provided between an inner peripheral end surface of the cover and an outer peripheral surface of the bearing* [e.g., 54a, with bush 122], and claim 9 recites a thickness of 2-10 mm. The Examiner is invited to consider the specification in relation to these features, as follows.

Background. The Applicants' specification at page 4, line 21, explains the disadvantages of the conventional structure shown in Fig. 20:

> Here, because of higher pressure in the discharge muffler chamber 293 of the second rotary compression element than intermediate pressure in the

> hermetically sealed container, sealing by the cover 294 is an important problem. A gasket 296 is accordingly held between the cover 294 and the support member 291, but sealing is deteriorated because the center bearing 291A side is away from the bolt. Thus, in the conventional case, a sealing surface 291B having a step was formed on a base of the bearing 291A, the gasket 296 was also held for sealing at this sealing surface 291B, a C ring 297 was attached to the bearing 291A, and an edge of the bearing 291A side of the cover 294 was pressed to the support member 291 side.

The passage spanning pages 104/105 explains the Applicants' advantage:

> ... the O ring provided between the inner peripheral end surface of the cover and the outer peripheral surface of the bearing [makes it] possible to prevent gas leakage between the cover and the support member by carrying out sufficient sealing with the inner peripheral end surface of the cover without forming any sealing surfaces on a base of the bearing. Therefore, since a capacity of the discharge muffler chamber is increased, and the conventional necessity of fixing the cover to the bearing by the C ring is eliminated, it is possible to greatly reduce total processing and component costs.

The Applicants' specification (page 71, line 10) relates to the claimed thickness:

> Here, in a test carried out by setting the upper cover 66 thinner than 2 mm, a danger of deformation by inner pressure of the discharge muffler chamber 62 arose. On the other hand, when the upper cover 66 was set thicker than 10 mm,

> the upper surface approached the stator 22 (stator coil 28), resulting in concern about insulation. According to the present invention, by setting the thickness of the upper cover 66 in the foregoing range, the rotary compressor 10 can be miniaturized while sufficiently enduring pressure of the discharge muffler chamber 62 higher than that in the hermetically sealed container 12, and an insulation distance from the electric element 14 can be secured. Further, an O ring 126 is provided between an inner peripheral end surface of the upper cover 66 and an outer surface of the bearing 54A (FIG. 12). By using the O ring 126 to seal the bearing 54A side, sufficient sealing is carried out on the inner peripheral end surface of the upper cover 66 to prevent gas leakage. Accordingly, it is possible to increase a capacity of the discharge muffler chamber 62, and eliminate the conventional necessity of fixing the inner edge of the upper cover 66 to the bearing 54A by the C ring.

This passages shows that 2-10 mm was arrived at experimentally and not just picked out of the air. The Applicants, but not the prior artisans, optimized the thickness.

Thus, the advantages of the claimed thickness and the claimed structure are set out in the instant specification.

O Rings. The Examiner points out that in Fig. 1 of WO '293 there are elements that arguably correspond to the discharge muffler chamber 62, cover 66, and bolt 78 of the Applicants' Fig. 1. The Examiner states that WO '293 also shows "an element between the cover and the support member;" also a "groove or element between the inner peripheral surface

of the cover and the outer surface of the bearing;" and further, a "heavily shaded line between the shaft and the bearing." The Examiner asserts that these anticipate the Applicants' claimed gasket, O ring, and carbon bushing, because these claimed features are what "one of ordinary skill ... would presume to be those elements."

The Examiner appears to assert that, because gaskets, O rings, and carbon bushings are all common conventional elements, the person of ordinary skill would interpret the vague disclosure of WO '293 in such a way as to anticipate. This Applicants respectfully disagree. A patent reference is not a Rorschach blob, and to "presume" a disclosure is not supported. The Applicants are unaware of any legal basis for the asserted presumption, and respectfully submit that a reference should be applied only insofar as it is definite.

In addition to asserting that Fig. 1 of WO '293 discloses these features, the Examiner also applies the other references, Kim and Singletary, for disclosing a gasket and an O ring.

Kim shows a large flat gasket 210 between the muffler and a valve plate, but no O ring is shown.

Singletary shows O rings 70, 72, sealing an "end-plug 26" (col. 21) in a sliding vane pump, which is a pump of a different type from that of the Applicants. This reference teaches nothing about the Applicants' particular application of an O ring.

Singletary's O rings are not provided between the inner peripheral end surface of the cover and the outer surface of the bearing of the compressor. Therefore such a feature cannot be obvious from Singletary.

Claims 8 & 11. According to instant claims 8 and 11, the gasket is held between the cover and the support member and the O ring, a separate and distinct feature, is provided between the inner peripheral end surface of the cover and the outer surface of the bearing.

As explained in the Applicants' specification quoted above, this combination of the gasket and O ring prevents gas leakage between the cover and the support member by providing sufficient sealing at the inner peripheral end surface of the cover without forming any sealing surfaces on a base of the bearing.

This constitutes an advance in the art, since a capacity of the discharge muffler chamber is increased, and the conventional necessity of fixing the cover to the bearing by the C ring is eliminated. The total processing and component costs are greatly reduced.

Thickness. As noted above, the above-quoted specification passage shows that 2-10 mm was arrived at experimentally and not just picked out of the air. The Applicants, but not the prior artisans, optimized the thickness. The prior art does not teach anything about the thickness, and in particular does not teach toward experimenting with it.

The facts of *In re Adler* have not been applied specifically to the instant case. Unless *Adler* teaches that any range is of anything is obvious even when the prior art fails to suggest experimentation, this citation is respectfully traversed.

CO_2. The Examiner asserts that carbon dioxide gas is not a structural element of the claimed compressor and therefore is given no weight. This is traversed. A working fluid—as in a heat pipe, for example—is part of a device, despite being a fluid instead of a solid state of

matter. The Examiner is invited to consider page 16, discussing a system that is hermetically sealed. The CO_2 could be continuously present in the Applicant's device as used.

Claim 12. The Examiner asserts that adding bolts is inherently obvious. However, no actual reference is provided. The Applicants therefore see official notice and request an actual reference.

Claims 29-33 are rejected under 35 U.S.C. §103(a) as being obvious over WO '293 in view of Roth et al., US 5,392,206. This rejection is respectfully traversed.

The Examiner admits that no bushing is specifically stated by WO '293, and applies Roth for disclosing a carbon bushing 60. Roth states at col. 2, line 52, that "sleeve bearing 60 is made of thermo plastic ... with ... 30% carbon fiber." The Applicants believe that this would be better characterized as a "thermoplastic bearing" than as a "carbon bearing" and that there is arguably no anticipation.

Claim 32. Claim 32 recites that the carbon bushing is on the second support member that seals the second (higher-pressure) cylinder, on the basis of the specification at page 96, line 10, which reads:

> ... pressure in a cylinder 38 of the second rotary compression element 34 at a 2nd stage becomes higher than that in the hermetically sealed container 12. Consequently, because of a pressure difference, it is difficult for oil to enter the bearing 54A of the upper support member 54, in which the rotary shaft 16 above an eccentric portion 42 is rotated while sliding. However, in the bearing 54A, since the rotary shaft 16 is rotated while sliding in the carbon bush 122 provided

> inside, no sliding problems occur. Therefore, no bush is disposed in the bearing 56A as described above, and hence, the relatively expensive bush can be omitted, which makes it possible to reduce a cost of the parts. In the embodiment of FIG. 26, for the purpose of reducing costs, the bush 122 was provided in the bearing 54A, but no bushes were provided in the bearing 56A. .... The described constitution enables sliding performance to be maintained in the bearing 56A as a short bearing, in which a pressure receiving area is small, and a load applied per unit area is large, and the bush to be removed from the bearing 54A while maintaining durability performance, in which a pressure receiving area is large, and a load applied per unit area is relatively small. Thus, it is possible to reduce costs.

The prior art does not suggest the Applicants' advantages or features.

New claim 49. Claim 49 recites additional features not disclosed or suggested by the applied art.

In view of the aforementioned amendments and accompanying remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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